

What is claimed is:

- 1           1.       A short-range RF network, the network comprising:
  - 2                       a plurality of nodes connected wirelessly to each other, and to at least
  - 3                       one resource;
  - 4                       at least one mobile device wirelessly communicating with at least one of
  - 5                       the plurality of nodes, and capable of roaming out of one node's coverage area
  - 6                       into another node's coverage area; and
  - 7                       a periodically updated first database for maintaining information
  - 8                       concerning the at least one mobile device currently in communication with at
  - 9                       least one of the plurality of nodes for each node of the short-range RF network;
  - 10                      the at least one resource having a periodically updated second database including
  - 11                      information concerning the plurality of nodes of the short-range RF network and relative
  - 12                      information concerning the first databases of each node of the short-range RF network;
  - 13                      the at least one mobile device capable of sending a user-initiated request for data using
  - 14                      the short-range RF network,
  - 15                      the network being arranged to forward said request to the at least one resource;
  - 16                      the at least one resource being arranged to provide the requested data via the network to
  - 17                      a node communicating with the at least one mobile device according to the periodically
  - 18                      updated relative information concerning the first databases stored at the second database of the
  - 19                      at least one resource.

1           2.       The short-range RF network according to claim 1, wherein the node receiving  
2       the requested data is arranged to determine whether the at least one mobile device is still in  
3       communication with said node, and;

4                   if the at least one mobile device is still in communication with said node  
5       according to the periodically updated information stored at the first database, said node  
6       forwards the requested data to the at least one mobile device.

1           3.       The short-range RF network according to claim 2, wherein if said node  
2       determines that the at least one mobile device is not in communication with said node  
3       according to the periodically updated information stored at the first database, said node  
4       forwards the requested data to a periodically updated third database for temporary storing.

1           4.       The short-range RF network according to claim 1, wherein the first database is  
2       located within each node of the short-range RF network respectively.

1           5.       The short-range RF network according to claim 1, wherein if the periodically  
2       updated relative information concerning the first databases stored at the second database of the  
3       at least one resource indicates that the at least one mobile device is not in communication with  
4       any of the plurality of nodes, the requested data is sent to a periodically updated third database  
5       for temporary storing.

1           6.       The short-range RF network according to claim 5, wherein if the periodically  
2   updated relative information concerning the first databases stored at the second database of the  
3   at least one resource indicates that the at least one mobile device has returned to  
4   communication with any of the plurality of nodes, the requested data is retrieved from the third  
5   data base and forwarded to the at least one mobile device.

1           7.       The short-range RF network according to claim 5, wherein if the periodically  
2   updated relative information concerning the first databases stored at the second database of the  
3   at least one resource indicates that the at least one mobile device has returned to  
4   communication with a different one of the plurality of nodes, and if the requested data stored in  
5   third data base is pertinent only to a coverage area of a node with which the at least one mobile  
6   device was last in communication, data pertinent to said different one of the plurality of nodes  
7   is forwarded to the at least one mobile device.

1           8.       The short-range RF network according to claim 1, wherein the at least one  
2   resource includes a node selected to be a control node of the short-range RF network capable  
3   of communicating with other nodes of the short-range RF network and with the at least one  
4   mobile device, the control node being associated with a periodically updated first database for  
5   maintaining information concerning the at least one mobile device currently in communication  
6   with said control node.

1           9.     The short-range RF network according to claim 1, wherein the at least one  
2 resource is further a gateway to other networks.

1           10.    The short-range RF network according to claim 1, wherein at least one of the  
2 plurality of nodes is located outside the coverage area of the at least one resource and  
3 communicates with said at least one resource by relaying through at least one other node of the  
4 plurality of nodes.

1           11..   The short-range RF network according to claim 1, wherein the short-range RF  
2 network is a Bluetooth network.

1           12.    The short-range RF network according to claim 1, wherein the requested data  
2 comprises continuous repetition of a predetermined set of data items.

1           13.    The short-range RF network according to claim 12, wherein the content of the data  
2 items is subject to updating to a value current for each repetition.

1           14.    The short-range RF network according to claim 13, wherein the requested data  
2 remains requested until actuation of a predetermined signal from the mobile terminal.

1           15.     The short-range RF network according to claim 1, wherein the requested data has  
2     a predetermined length and wherein the requested data ceases to be requested after transmission of  
3     the predetermined length of data.

1           16.     The short-range RF network according to claim 1,  
2             wherein the at least one resource has access to a periodically updated fourth database  
3     including information concerning mobile devices which were formerly in communication with  
4     any of the plurality of nodes during a predetermined time period; and  
5             when at least one other mobile device enters into the coverage area of any node of the  
6     plurality of nodes of the short-range RF network, the at least one resource determines whether  
7     the at least one other mobile device has been in communication with any of the plurality of  
8     nodes of the short range RF network during said predetermined time period; and

9             if the information stored at the periodically updated fourth database indicates  
10     that the at least one other mobile device has been in communication with any node of  
11     the plurality of nodes of the short-range RF network during said predetermined time,  
12     the at least one resource scans through periodically updated third database to determine  
13     whether there is still requested data at the temporary storage, and if requested data  
14     exists at the temporary storage, the at least one resource provides said data to a node  
15     communicating with the at least one other mobile device according to the periodically  
16     updated information stored at the second database.

1           17.     The short-range RF network according to claim 16, wherein the node receiving  
2     the data packet determines whether the at least one other mobile device is still in  
3     communication with said node according to the periodically updated information stored at the  
4     first database, and;

5                 if the at least one other mobile device is still in communication with said node  
6     according to the information stored at the first database, said node forwards the requested data  
7     to the at least one other mobile device.

1           18.     The short-range RF network according to claim 17, wherein if said node  
2     determines that the at least one other mobile device is not in communication with said node  
3     according to the periodically updated information stored at the first database, said node  
4     forwards the requested data to the periodically updated third database for temporary storing.

1           19.     The short-range RF network according to claim 16, wherein the at least one  
2     resource includes a node selected to be a control node of the short-range RF network capable  
3     of communicating with other nodes and with the at least one other mobile device, the control  
4     node comprising a periodically updated first database for maintaining information concerning  
5     the at least one other mobile device currently in communication with said control node.

1           20.     The short-range RF network according to claim 16, wherein the at least one  
2     mobile device and the at least one other mobile device is the same device.

1           21.     The short-range RF network according to claim 16, wherein the at least one  
2     resource is further a gateway to other networks.

1           22.     The short-range RF network according to claim 16, wherein at least one of the  
2     plurality of nodes is located outside the coverage area of the at least one resource and  
3     communicates with said at least one resource by relaying through at least one other node of the  
4     plurality of nodes.

1           23.     The short-range RF network according to claim 16, wherein the short-range RF  
2     network is a Bluetooth network.

1           24.     A method of operating a short-range RF network, the network comprising:  
2                 a plurality of nodes connected wirelessly to each other, and to at least one resource; and  
3                 at least one mobile device wirelessly communicating with at least one of the plurality of  
4     nodes, and capable of roaming out of one node's coverage area into another node's coverage  
5     area;  
6                 and the method comprising the steps of:  
7                 periodically updating a first database for maintaining information concerning the at least  
8     one mobile device currently in communication with at least one of the plurality of nodes for  
9     each node of the short-range RF network;  
10                in the at least one resource, periodically updating a second database including  
11     information concerning the plurality of nodes of the short-range RF network and relative  
12     information concerning the first databases of each node of the short-range RF network;  
13                sending a request for data using the short-range RF network, the request initiated by a  
14     user of the at least one mobile device and forwarding the request to the at least one resource;  
15     and  
16                providing the requested data to a node communicating with the at least one mobile  
17     device according to the periodically updated relative information concerning the first databases  
18     stored at the second database of the at least one resource.



1           25.    The method according to claim 24, wherein the node receiving the requested  
2   data determines whether the at least one mobile device is still in communication with said  
3   node, and;

4                    if the at least one mobile device is still in communication with said node  
5   according to the periodically updated information stored at the first database, the requested data  
6   is forwarded to the at least one mobile device.

1           26.    The method according to claim 25, wherein if the determination indicates that  
2   the at least one mobile device is not in communication with said node according to the  
3   periodically updated information stored at the first database, the requested data is forwarded to  
4   a periodically updated third database for temporary storing.

1           27.    The method according to claim 24, wherein the first database is located within  
2   each node of the short-range RF network respectively.

1           28.    The method according to claim 24, wherein if the periodically updated relative  
2   information concerning the first databases stored at the second database of the at least one  
3   resource indicates that the at least one mobile device is not in communication with any of the  
4   plurality of nodes, the requested data is sent to a periodically updated third database for  
5   temporary storing.

1           29.     The method according to claim 28, wherein if the periodically updated relative  
2     information concerning the first databases stored at the second database of the at least one  
3     resource indicates that the at least one mobile device has returned to communication with any  
4     of the plurality of nodes, the requested data is retrieved from the third data base and forwarded  
5     to the at least one mobile device.

1           30.     The short-range RF network according to claim 28, wherein if the periodically  
2     updated relative information concerning the first databases stored at the second database of the  
3     at least one resource indicates that the at least one mobile device has returned to  
4     communication with a different one of the plurality of nodes, and if the requested data stored in  
5     third data base is pertinent only to a coverage area of a node with which the at least one mobile  
6     device was last in communication, data pertinent to said different one of the plurality of nodes  
7     is forwarded to the at least one mobile device.

1           31.     The method according to claim 24, wherein the at least one resource includes a  
2     node selected to be a control node of the short-range RF network capable of communicating  
3     with other nodes of the short-range RF network and with the at least one mobile device, and  
4     the control node periodically updates a first database for maintaining information concerning  
5     the at least one mobile device currently in communication with said control node.

1           32.     The method according to claim 24, wherein the at least one resource is further a  
2 gateway to other networks.

1           33.     The method according to claim 24, wherein at least one of the plurality of nodes  
2 is located outside the coverage area of the at least one resource and communicates with said at  
3 least one resource by relaying through at least one other node of the plurality of nodes.

1           34.     The method according to claim 24, wherein the short-range RF network is a  
2 Bluetooth network.

1           35.     The method according to claim 24, wherein the requested data comprises  
2 continuous repetition of a predetermined set of data items.

1           35.     The method according to claim 36, wherein the content of the data items is subject  
2 to updating to a value current for each repetition.

1           37.     The method according to claim 36, wherein the requested data remains requested  
2 until actuation of a predetermined signal from the mobile terminal.

1           38.     The method according to claim 24, wherein the requested data has a predetermined  
2     length and wherein the requested data ceases to be requested after transmission of the  
3     predetermined length of data.

1           39.     The method according to claim 24, wherein:  
2             the at least one resource has access to a periodically updated fourth database including  
3     information concerning mobile devices which were formerly in communication with any of the  
4     plurality of nodes during a predetermined time period;  
5             when at least one other mobile device enters into the coverage area of any node of the  
6     plurality of nodes of the short-range RF network, the at least one resource determines whether  
7     the at least one other mobile device has been in communication with any of the plurality of  
8     nodes of the short range RF network during said predetermined time period; and  
9             if the information stored at the periodically updated fourth database indicates  
10            that the at least one other mobile device has been in communication with any node of  
11            the plurality of nodes of the short-range RF network during said predetermined time,  
12            the at least one resource scans through periodically updated third database to determine  
13            whether there is still requested data at the temporary storage, and if requested data  
14            exists at the temporary storage, said data is provided to a node communicating with the  
15            at least one other mobile device according to the periodically updated information  
16            stored at the second database.

1           40.     The method according to claim 39, wherein the node receiving the data packet  
2     determines whether the at least one other mobile device is still in communication with said  
3     node according to the periodically updated information stored at the first database, and;  
4                 if the at least one other mobile device is still in communication with said node  
5     according to the information stored at the first database, the requested data is forwarded to the  
6     at least one other mobile device.

1           41.     The method according to claim 40, wherein If the determination indicates, that  
2     the at least one other mobile device is not in communication with said node according to the  
3     periodically updated information stored at the first database, the requested data is forwarded to  
4     the periodically updated third database for temporary storing.

1           42.     The method according to claim 39, wherein the at least one resource includes a  
2     node selected to be a control node of the short-range RF network capable of communicating  
3     with other nodes and with the at least one other mobile device, the control node comprising:  
4                 a periodically updated first database for maintaining information concerning the at least  
5     one other mobile device currently in communication with said control node.

1           43.     The method according to claim 39, wherein the at least one mobile device and  
2     the at least one other mobile device is the same device.

1           44.     The method according to claim 39, wherein the at least one resource is further a  
2 gateway to other networks.

1           45.     The method according to claim 39, wherein at least one of the plurality of nodes  
2 is located outside the coverage area of the at least one resource and communicates with said at  
3 least one resource by relaying through at least one other node of the plurality of nodes.

1           46.     The method according to claim 39, wherein the short-range RF network is a  
2 Bluetooth network.